



# The MINUTEMAN

Official Newsletter of the Minuteman Repeater Association

## The President's Corner

Summer is over and it was a busy one for us. Between Field Day and a couple of major repeater system failures, we were pretty busy. We even had a June Extra newsletter. And so begins another season for the MMRA. This is once again time for membership renewal; we did well last year - we start the year with nearly 400 members! We hope all of you will stick with us during the year upcoming. We will be doing more to improve the repeater system - another new controller will go into service at Weston. For more details on what has happened with each of the repeaters and what will be done this year, see Items of Interest.

## Important Announcement: MMRA Flea Mkt Postponed

*Hopefully all of you have become aware that we had to postpone the Flea Market. We are working on getting it rescheduled for March 20; Ralph, WB2DCL is submitting application for use of the Westboro High School on that date. We should have confirmation in about a month.*

You may also have noticed that the newsletter has a somewhat different look. This is because we have a new Editor and Publisher - Bob Levine, KD1GG is taking on the job. I have to thank him for that; while I have enjoyed doing it, it added just a wee bit too much to chewing up time I need for other MMRA matters. I'll

Volume 22, Number 1 - Sept/Oct 92

still be writing for the newsletter; at least someone else will be doing the more arduous task of preparing it for publication and getting it out. Bob will be working to get advertising into the newsletter to help defray the cost of publication and distribution - if any of you know of some business that would like to advertise here, let Bob know. This rag reaches 350 to 400 technically minded people; there ought to be someone other than ham radio store proprietors who would like to reach an audience like that. We will be doing Field Day again next year; we had enough fun last June to make everyone look forward to next year. I have to give special thanks to Bob Feltmate for his participation when you read the article on Field Day, you'll understand why. Tom Qualtieri deserves the same appreciation. We'll look forward to seeing you at the next meeting, Monday, September 21 at 7:30. The annual budget is the key topic; you can see the details of the budget here in the newsletter; the only major expenditure for new equipment will be for an SCOM 7K controller for Weston.

## Items of Interest

This issues items column will deal primarily with repeater news - what's been happening with the system over the summer.

We'll start with Marlboro, 146.61 Marlboro. Back in July, on a Friday night, we took a hit that killed the K1BC controller. We think it was lightning. I was on my way down to New York City early Saturday morning amidst an advancing squall line. I learned upon returning that the repeater went belly up just after I left the area. Walter Ching, N1HBR, went up to the site and found the controller dead. When we both got up there, we found that the exciter

would not key as well. Walter and I had been trying to figure out an easy way to resolve autopatch conflicts between the network and '61, and were also dealing with re-working the line coupler to improve patch quality. We had decided that the best resolution to the problem was to redirect the new controller scheduled for '82 to Marlboro. When the hit took out the '61 controller, we had the new controller in hand, and had been preparing it for installation by putting it in service up at 449.925. Walter put in an all-nighter to build an interface for the repeater to controller inter-connect, and on a Saturday, he and I went up to do the installation. It took all day and most of the night to fix the exciter and get the controller on-line. The patch problems are gone, and the

**Mark your calendar now for the first meeting of the new season:**

*Monday September 21  
Campion Center Weston  
7:30 pm*

new patch function works just fine. In August, the power amplifier lost interest in further toil - we were lucky, it was just a power supply problem, so the fix was not too difficult...but one of the rules that seems to govern working on amateur repeaters is that it is only luck that gets you out of the shelter without something else going wrong. The exciter developed a problem in its keying circuit, so we had to tear the repeater down - we were lucky to have the necessary parts in the shelter to effect repairs. We also found the exciter 2.4k off frequency; the oven died. So we tweaked it onto 146.610 give or take a few hertz; we'll complete the repair when the parts come in for the oven. At the same time, we'll do complete re-alignment of the exciter and receiver. This winter we will also be putting the 4CX250B amplifier back on the air; Nick, KC1ZU, has gotten it working. Hopefully Nick will continue to help us on the technical committee.

#### **Weston, 146.82, KA1AL/R**

Wouldn't you know that when we decided to put the new controller at Marlboro, the Weston controller died? Tom Qualtieri, WB1GMA, Walter Ching, N1HBR, Frank Hielbrunner, W1JDO and I went to fix it; Tom, who has professionally fixed personal computers, found a bad EPROM memory chip. We knew it was going to take a week or more to get a new set of

chips "burned." So we all took a ride up to the '61 site to get old spares from the dead controller, figuring that we should be able to get the repeater back on the air. It would play N1BHI instead of KA1AL for its identifier, but it's more important not to have the system off the air for an extended time. Besides, Frank had never seen the '61 site, so the trip would not be a total waste if the chips didn't work. Fortunately they did; during the last week of August, Walter and Bob Clements, the inventor of the K1BC controller, burned new 2716 EPROMS, and KA1AL/R is back on the air. We even have spare sets of chips, and Bob was kind enough to leave us with all the source programs along with a copy of the development environment. We will be setting up to be able to work with the controller programs without having to bother Bob. The MMRA owes a lot to Bob. His controllers have run three of our repeaters for 10 trouble-free years! They were leading edge controllers; only technology has passed them by. They will continue to be used at other repeaters, probably Stoneham and possibly Quincy. Walter arranged for New England Telephone to work on our lines into Weston; they finally gave us a new pair, and as of this writing, the noise on the patch line is gone.

**Quincy, 146.67, KA1HKP/R and 224.40, KA1CLX/R** The two meter machine has been cooking along nicely; the 220 machine has had problems. It has been up and down; Mike Landis, KA1HKP, got it working once, then Scott Bullock, KA1CLX, came to the rescue. Taking time from the crazy schedule he has starting up a new business, Scott got the repeater and the link back on the air; as of this writing, the system is playing well. Stoneham, 146.715, N1DKZ/R '715 has for a long time suffered from intermod and desense problems; part of the problem has been its duplexer. It is an old set, and has developed an arcing problem. As age increases dirt and oxidation can create a path for arcover when transmit power is applied. That arcing desenses the receiver, because it makes broad band noise outside the passband and notch widths of the duplexer. So we plan to try re-silver plating the cans; in addition, either the '82 or '61 controller will be placed in service there. That will provide a reliable autopatch for '715.

#### **Hopkinton, 223.94, N1BHI/R**

The machine has been running at reduced power output; we will be investigating that in the next few weeks. Link quality remains good, but

showed up during the afternoon with a battery that had been charged using solar cells, so we put Bob's (KD1GG) station on using that battery for the natural power bonus. After the storm, Walter re-designed the shelter, providing a covered area about 30 feet by 10 feet; that evening we fired up Mike's gas grill and feasted on cheeseburgers and great chili made by Frank. The meal was accompanied by a lot of bad jokes about being able to use natural power after eating all that chili. Bob, N1CTY showed up to operate, he and a former ham named Brian made quite a lot of CW contacts for us. Andrea returned late in the day and added her share of CW contacts. We managed to keep the stations hot for most of the night, but contact rates were not always high - but who cared, we were having fun. During the evening, several people showed up to visit; Andrea's father, Jack, N1JAH stopped by. A couple of guys who are involved with the 147.27 repeater, hosted by the MMRA at Slygo came to hang out for a while. Breakfast on Sunday consisted of scrambled eggs, sausage, lots of coffee and leftover chili. It was a beautiful day; sunny and dry. It did get warm, so breaking down got to be a sweaty job. Walter, Bob Feltmate, Bob Levine, Nick, Tom and I finished cleaning up the site by about 5:30. All in all, Field Day was a success. Problems were overcome, the operating was fun and everyone had a good time. We are going to do it again next year, so try to keep that last weekend in June free and come and join us.

**Volunteers  
Are  
Needed  
for  
BOXBORO  
Talk-in  
Hospitality  
Suite  
Club Table**

(Another interesting occurrence that took place during Field Day went unnoticed by many operators. Early Sunday, there were several large and damaging earthquakes in southern California.

I was operating 20 SSB and found a frequency (14.325?, can't remember exactly) which was cleared for emergency traffic. During Field Day, I was called by an operator in Brazil who was frantic about trying to get information about his relatives in the earthquake area. I was able to direct him to the information frequency. It is truly an incredible coincidence that the *exact* type of situation that Field Day prepares us for, actually happened during Field Day. Thousands of amateur operators were already set up with all kinds of power (solar, gas generators etc...) exactly when they were needed! KD1GG

### Ham Radio Calendar - Important Dates

Mon Sept 21	MMRA Meeting
Sat/Sun Oct 3/4	Boxboro Convention
Sat Oct 10	MMRA VE Session
Sat/Sun Oct 17/18	Deerfield
Sat Oct 24	CQ WW DX SSB
Sat Nov 7	ARRL SS CW
Sat Nov 14	MMRA VE Session
Sat Nov 21	ARRL SS SSB
Sat Nov 28	CQ WW CW

### Meet the New Editor

Disregarding the advice of my father WB1ATX, I have once again volunteered for an assignment. It was around midnight or so on Field Day (after eating Frank's chili) that I realized that I had done this. Seriously, I am pleased to accept the position of Editor for The Minuteman Newsletter. I have a bit of experience with this sort of thing, so I decided this would be a good way to get more involved with the MMRA.

My name is Bob Levine (KD1GG) and although I am the Editor, I prefer not to write all of the articles. I am asking you to submit articles that would be of general interest to the membership. These can be of a technical, philosophical, or just a general interest topic. I would greatly prefer to receive your articles electronically because I would rather be chasing DX than typing. I have an IBM and a Macintosh computer and I can read almost any format diskette. I can also arrange to receive an upload from you if you have a modem. If you prefer, I can receive your ASCII text direct on packet or send me mail at K1UGM or the K1EA node of the YCCC Packetcluster. You can also send me mail on Prodigy to WPKM01A. My EMAIL address is levine@mc.com. My address for US Mail is 32 Queens View Road, Marlboro MA 01752 and my phone is (508) 485-7006. If you want to call to coordinate a file transfer, please call earlier than 9 pm or you will have face the wrath of my wife Carol, KA1WRW. I hope one of these routes is convenient for you!



it seems that the user link disable function is not working.

#### **Weston, 224.70, N1HBR/R**

This machine was donated to the MMRA by Bob Clements, K1BC. Walter and Bob, while they were working on the '82 controller, got Walter's call set in the repeater ID, so 224.70 is now officially N1HBR/R. Re-coordination of the repeater is underway.

#### **Marlboro, 449.925, N1BHI/R**

The 440 machine has been working well - indicative of the quality of Scott's (KA1CLX) engineering and construction ability. The only real problem we've had was with the telephone line; Walter has had that fixed by New England Telephone.

#### **Netrom, 145.03, KA1OUI-3**

The netrom continues working well but we did have a failure in the terminal used to talk to the TNC. If anyone has an old dumb terminal with a standard RS-232 interface that works, give some thought to donating it for use on the Netrom. If it's just sitting around doing nothing, we could sure use it.

### **Field Day 1992**

Those of you who were unable to attend missed a lot of fun. We had a small but enthusiastic crew. We got up to Slygo Hill early Saturday morning to begin setup. The only sign that anything was about to happen was the presence of a portable toilet that Mike, N1KRJ had arranged. Tom, WB1GMA, Walter, N1HBR, Bob, KA1ZJE I arrived first and began erecting antennas. It was cloudy - we had hoped that we would not have to contend with the sun. Tom began laying out the pieces of the A4 tribander while the rest of us began erecting the mast for the beam. Walter erected a shelter for the cooking and eating area. Bob, KD1GG, showed up with his station a bit later in the morning, he brought a TS-850, 2M rig and TNC for packet, and accouterments along with a laptop that would allow us to run computerized logging. Andrea, WS1C, brought a tent and set her own station up on a table next to her car. She was first on the air - while we were still running around trying to get antennas ready, she was making contacts. Bob's station was set up in Andrea's tent, and was the second to go into service. While all that was going on, Mike, N1KRJ and Nick, KC1ZU, arrived, and helped

with antennas. Mike is deathly afraid of heights, but got up onto the top of Bobs welding truck along with Bob and Nick. We passed up the beam, and they mounted it to the mast. The next order of business was our 80 meter zep. I got out my bow and antenna launching arrow and fired a line over a beam in the substructure of the black water tower. Tom, Bob and Frank, KB1FZ, worked on the antenna, while I went off with Mike to get the camping trailer that Bob (WA1ZJE) had loaned us. By the way, if it sounds like Bob brought a lot of stuff, you are right. His welding truck had everything from a 10 kilowatt generator to a refrigerator! He had anything we would need for fabrication and construction in that truck; the camper made a good shelter for an HF and VHF station. Bob

**Don't Forget to Renew  
Your Membership this  
Month !!!**

brought most of the backbone stuff, and we owe him thanks for going the extra distance to help make the weekend a success. About the time Mike and I got back with the trailer, the news photographer showed up and so did a violent thunderstorm. Andrea broke her temporary station down just in time, and the photographer was running around taking pictures while we all watched over our shoulders as the storm cell approached. When it finally broke, we all huddled under Walter's shelter, holding onto parts of tarp, poles and ropes to keep the thing up as the wind whipped around us. We were lucky - most of the lightening strikes were off to the north and east, we just got a lot of rain and wind. After the squall line passed, the weather turned perfect - cool and dry, ideal for a field day operation. By mid-afternoon we had all three stations on the air; Nick had brought a 2 meter all mode rig, along with ridiculously huge antenna - about a 32 foot boom and lots of elements. That station was operated from the camper, along with the HF station working primarily 40 and 80 meters with the big zep, fed with 450 ohm parallel line. I provided a TS440, power supply, tuner and laptop for that station. The only hitch for that operation occurred when we learned that there were a couple of holes in the camper top; water that had accumulated there shifted while we were adjusting a feedline, came in through one of the holes, drenching Mike and Nick. Fortunately, the all mode rig was unharmed. One of ham radio's most useful tools, duct tape, made quick work of the holes. Ira, WA1W

### The MMRA VE Team

**Bob Levine KD1GG**

I have started an ARRL VE Team that will be giving exams for all classes of Amateur Radio licenses starting in October. Exams will be given at the Marlboro Public Library starting at 9:30 am on selected Saturdays. Registration is strongly suggested as the sessions will be limited to 12 candidates. I can be contacted by all of the methods listed in the "Meet the New Editor" section of this newsletter. Currently the following individuals have volunteered to be VEs on the Team:

Ira WA1W, Joel WU1F, Mark AA1DT, Steve K1ST, Mark W1W, Ron N6CJM, Lou KD1KF, and myself.

I am looking for a few more to insure at least 5 VEs for each session. If you are an Advanced or Extra Class Ham and are interested in participating on the team, please contact me. If you are not already a VE, I will assist you in getting your VE credentials from the ARRL.

The schedule for exams is for the remainder of 1992 is October 10, November 14, and December

19. The format for Morse code tests will be multiple choice (or 1 minute solid copy).

### New England Ham Radio Convention and Flea Market at Buxboro, Massachusetts

The MMRA will again this year have a presence at Buxboro. There will be a Hospitality Suite and a Club Table with MMRA information. The MMRA repeater network will be used for talk-in also. All of these functions require volunteers if they are to be successful. Please allocate a small piece to your Buxboro weekend to assist with one of these MMRA functions. Sign up will be at the September meeting.

### RAFFLE Update:

The drawing for the second MMRA Raffle will be held Sunday near the close of the Convention. Members are reminded to have all tickets submitted in time for the drawing. Raffle tickets will also be available at the Club Table.

## Legislative Alert: State House To Consider Tower Bill

House Bill 2512 entitled "An Act Amending the Zoning Act to Reference Federal Regulations Concerning the Construction of Amateur Radio Antenna Structures" has been sent to the Committee on Local Affairs for study.

The purpose of the bill is to incorporate the following language, patterned after the FCC's PRB-1, into the Massachusetts zoning law:

"No zoning ordinance or by-law shall prohibit the construction or use of an antenna structure by a federally licensed amateur radio operator. Zoning ordinances and by-laws which regulate such antenna structures must reasonably accommodate amateur radio communications by federally licensed amateur radio operators to the extent provided by federal regulations at 47 C.F.R. 97.15(e), and must constitute the minimum practicable regulation to accomplish the legitimate purpose of the city or town enacting such ordinance or by-law."

If enacted, the amendment would not create any new rights which amateur radio operators do not already have. However, the addition of the language to the state zoning law will make local officials aware of the existence and validity of the federal regulations and the limited federal pre-exemption concerning amateur antenna structures announced by the FCC in PRB-1. It is hoped that the presence of the quoted language in the state law will make it easier for amateur radio operators to obtain building permits for antenna supports in communities where such structures may conflict with local zoning regulations. It may also have the effect of saving time and money for amateurs who would otherwise have to appeal denials of building permits to local boards of appeal, or the courts. Likewise, it may save the costs of unnecessary litigation for some cities and towns.

## What to do NOW to support the Bill

This is the best time to take the important step of informing the members of the Local Affairs Committee of the valuable public services provided by amateur radio operators, the need for this legislation and the numbers of amateur radio operators who are concerned about it. A letter is the best way to inform the legislators. Enclosed in this newsletter is a list of the names of the members of the Committee and their room numbers in the State House as well as their phone numbers. Your letter will be especially effective if you live in a district served by a member and you should mention that in your letter. However, even if you don't live in a district served by a member, your voice is still important, especially at this stage. Since amateur radio operators are a minority, it is imperative that as many of us as possible voice our support for this legislation which might be unpopular among non-hams. It is also most important that the quality of our comments to these legislators reflect well upon amateur radio operators as a group. Letters should be clear, concise, supported by sound reasoning and above all, dignified.

If you need further information on the bill, or would like to become more involved, send a SASE to Thomas C. Carrigan, 5 State Street (Suite 1F), Worcester, MA, or call (508) 752-6885.

To help you get started, here is a sample letter:

Senator Martin J. Dunn  
Chairman, Local Affairs Committee  
State House (Room 416-C)  
Boston, MA. 02133

RE: H-2512

Dear Senator Dunn:

I write to you [as a constituent] to ask you to support House Bill 2512 related to Amateur Radio antenna structures. The proposed change in the law would simplify the application process for permits, save the time of rule enforcement personnel who may not be aware of the impact of federal law upon their zoning ordinances and by-laws, and allow amateurs to better serve the public interest by installing better antenna systems than might otherwise be allowed by local authorities.

Please vote for the passage of H-2512.

Yours truly,

\*\*\*\*\* OR \*\*\*\*\*  
Dear Senator Belmont:

I ask you to support H-2512, which is before your committee on Local Affairs. As an amateur radio operator, I volunteer my time and services to support [name an emergency service]. By passing the bill, you will make it easier for amateur radio operators in Massachusetts to obtain building permits for their antenna structures. This will encourage some amateurs to construct antenna systems which will, in times of emergency, provide increased amateur radio communications resources to assist [the emergency organization] with its emergency management function. The emergency preparedness of the Commonwealth would be improved at no cost to the taxpayer.

Yours truly,

\*\*\*\*\*  
For additional information, contact Tom Carrigan, (508) 752-6885, mail address: 5 State Street (1F), Worcester, MA. 01609, teletype address: MA1N5641B1H

#### LOCAL AFFAIRS COMMITTEE

##### SENATORS

- \* Martin J. Dunn (Chairperson), Room 416-C, 722-1415  
District: Chicopee, Easthampton, Granville, Holyoke, Montaguery, Russell, Southampton, Southwick, Westfield
- \* Robert D. Welton (Vice-Chairperson), Room 409, 722-1540  
District: Ashburnham, Athol, Barre, Belchertown, Bernardston, Brimfield, Brookfield, E. Brookfield, Frying, Gill, Hardwick, Holland, Hubbardston, Leyden, Monson, New Braintree, New Salem, N. Brookfield, Northfield, Oakham, Orange, Palmer, Paxton, Pelham, Petersham, Phillipston, Royalston, Rutland, Shutesbury, Spencer, Sturbridge, Templeton, Wales, Ware, Warren, Warwick, Wendell, W. Brookfield, Winchendon
- \* Matthew John Amorello, Room 520, 722-1485  
District: Hopedale, Hopkinton, Leicester, Millbury, Northboro, Sutton, Upton, Westboro
- \* Paul D. Harold, Room 413-D, 722-1494  
District: Avon, Braintree, Holbrook, Quincey
- \* James P. Jajuga, Room 216, 722-1605  
District: Amesbury, Haverhill, Merrimac, Methuen, Newburyport, N. Andover, Salisbury
- \* Thomas C. Norton, Room 312, 722-1114  
District: Fall River, Freetown, Somerset, Swansea, Westport
- \* Jane Maria Swift, Room 407, 722-1625  
District: Adams, Milford, Becker, Blandford, Charlemont, Cheshire, Chester, Clarksburg, Colrain, Cummington, Dalton, Egremont, Florida, Gt. Barrington, Hancock, Hawley, Heath, Hinsdale, Lanesboro, Lee, Lenox, Middlefield, Monroe, Monterey, Mt. Washington, New Ashford, New Ashboro, N. Adams, Otis, Peru, Pittsfield, Plainfield, Richmond, Rowe, Sandisfield, Savoy, Sheffield, Stockbridge, Tolland, Tyringham, Washington, W. Stockbridge, Williamstown, Windsor, Worthington

##### REPRESENTATIVES

- \* Byron Rushing (Chairperson), Room 33, 722-2060  
District: Boston
- \* Daniel J. Rancieri (Vice-Chairperson), Room 134, 722-2400  
District: Bellingham, Blackstone, Franklin, Medway
- \* Stephen M. Brewer, Room 43, 722-2030  
District: Barre, Brookfield, E. Brookfield, New Braintree, N. Brookfield, Spencer, Sturbridge, Warren, W. Brookfield
- \* Thomas B. Cahir, Room 443, 722-2460  
District: Bourne, Falmouth, Mashpee, Sandwich
- \* Emilio J. Goguan, Room 134, 722-2400  
District: Fitchburg
- \* Jonathan L. Bealy, Room 33, 722-2060  
District: Ashfield, Buckland, Charlemont, Chesterfield, Colrain, Conway, Cummington, Deerfield, Goshen, Heath, Huntington, Middlefield, Montague, Plainfield, Shelburne, Sunderland, Whitely, Williamstown, Worthington
- \* Marie-Louise Kohse, Room 167-C, 722-2692  
District: Dedham, Needham, Westwood
- \* Mary Jeanette Murray, Room 134, 722-2400  
District: Cohasset, Hingham, Hull
- \* Janet W. O'Brien, Room 134, 722-2400  
District: Hanover, Norwell, Rockland,
- \* Michael J. Sullivan, Room 43, 722-2030  
District: Abington, Holbrook, Whitman
- \* Philip Travis, Room 33, 722-2370  
District: Norton, Rehoboth, Seekonk, Swansea

\* Your State Legislators 1991-1992 Published by the Office of the Massachusetts Secretary of State, Michael Joseph Connolly, Secretary

# MMRA 1992/93 Budget

	1992 Budget	1992 Actual	1992 Variance	1993 Budget
<b>Income:</b>				
Dues	7500.00	7957.80	-457.80	7500.00
Flea Market	1000.00	2144.84	-1144.84	1000.00
Raffles	200.00	254.00	-54.00	200.00
Advertising	0.00	0.00	0.00	500.00
Major Raffles	0.00	3950.00	-3043.00	0.00
Misc.	0.00	43.00	0.00	0.00
<b>Total</b>	<b>8700.00</b>	<b>14349.64</b>	<b>-4699.64</b>	<b>9200.00</b>
<b>Expenses:</b>				
Administration	3200.00	3781.04	-581.04	3850.00
N1BHI-146.61	500.00	1472.77	-972.77	550.00
KA1HKP-146.67	450.00	173.95	276.06	400.00
N1DKZ-146.715	500.00	690.90	-190.90	750.00
KA1AL-146.82	1500.00	448.88	1051.12	1225.00
N1BHI-223.94	300.00	0.00	300.00	200.00
KA1CLX-224.40	200.00	171.22	28.79	300.00
KA1AL - 224.70	540.00	255.52	284.48	525.00
N1HBR-449.925	760.00	645.96	114.05	475.00
KA1OUI-145.03	250.00	116.38	133.63	175.00
R&D/Contingency	500.00	832.24	-332.24	0.00
Test Equipment Raffle	0.00	2224.80	-2224.80	500.00
Field Day	0.00	342.10	-342.10	250.00
<b>Total</b>	<b>8700.00</b>	<b>11155.74</b>	<b>-2455.74</b>	<b>9200.00</b>

Details of 1993 Administration	
newsletter	1500.00
meetings	300.00
president's account	50.00
secretary's account	300.00
treasurer's account	50.00
flea market	400.00
insurance	950.00
P.O. Box	100.00
miscellaneous	200.00
<b>Total</b>	<b>3850.00</b>

MMRA repeaters
146.61, Marlborough
146.67, Quincy
146.715, Stoneham
146.82, Weston
223.94, Hopkinton
224.40, Quincy
224.70, Weston
449.925, Marlborough
145.03, Marlborough



## The Minuteman

Newsletter of the Minuteman Repeater Association - September 1992  
Volume 22 Number 1

### Repeater Information:

Weston	146.82	KA1AL/R	PTL	P
Marlboro	146.61	N1BHI/R	FTL	P
Marlboro	449.925	N1HBR/R	FTL	P
Stoneham	146.715	N1DKZ/R	PTL	P
Quincy	146.67	KA1HKP/R	PTL	P
Quincy	224.40	KA1CLX/R	FTL	
Weston	224.70	N1HBR/R	FTL	
Hopkinton	223.94	N1BHI/R	FTL	

FTL=Full Time Linked      PTL=Part Time Linked      P=Autopatch

### Officers and Board of Directors:

President:	Andy Morrison, N1BHI	508-481-3878
Vice President:	Walter Ching, N1BHR	508-481-0994
Secretary:	Frank Morrison, KB1FZ	508-443-6047
Treasurer:	Ian MacLennan, AFIR	
Clerk:	Al Williams, KA6BUV	
Directors:	Tom Qualtieri, WB1GMA	Al Kunian, KA1AL
	Scott Bullock, KA1CLX	Mike Ryan, N1KRJ
Newsletter Editor:	Bob Levine, KD1GG	508-485-7006

Membership Meetings: 2<sup>nd</sup> Monday of Sept, Nov, Jan, Mar, May (except Sept 21 this year) at  
Campion Center, Weston at 7:30pm

Board Meetings: 2<sup>nd</sup> Monday of Oct, Dec, Feb, Apr. Meetings are open and members are welcome.  
If a visiting member wants to be on the agenda, please contact Andy Morrison  
beforehand.

The MMRA is dedicated to Amateur Radio and the public service. The MMRA is a registered non-profit Massachusetts corporation. Membership is open to all amateurs. Annual dues are \$25.00 individual, \$35.00 family.

---

### Mail Return Address:

MMRA  
P.O. Box 2282  
Lexington, MA 02173

TO: